Simplifying Assignment Status

RIPE 89 Address Policy - Remco van Mook

Previously

- Why-pi, Address Policy, RIPE82
- Why-pi redux, Address Policy, RIPE88

But much longer ago..

- 2013-03: Post Depletion Adjustment of Procedures to Match Policy Objectives, and Clean-up of Obsolete Policy Text
- Proposed by Tore Anderson and Malcolm Hutty
- Resulting in RIPE-604, February 2014

What am I trying to improve

- Accessibility
- Simplicity

What am I trying to achieve

- Our address policy has a global audience!
- A lot of the arcana have local relevance - to us!
- The result is reflected in the database
- Rest of the world only cares about who/where
- "What does legacy mean? Is that still valid?"

What am I trying to achieve

- How much training do you need to use a phonebook?
- Understanding the database isn't easy
- Understanding policy is hard
- Contributions to policy are super hard

What am I trying to achieve

- Goals for Address Policy
  - Concise
  - Complete
  - Consistent
- Failure to clean up after ourselves amounts to gatekeeping - even if that's unintended

Contracts vs Operations

- the current 'status' field is a conflation between contractual relationship and operational state
- In order to evolve, splitting those up is probably good
  - Lawyers shouldn't write engineering docs
  - Engineers shouldn't write contracts

Complete?

- Question for the room - which policy document defines the status field for IPv6?
- AGGREGATED-BY-LIR - Chapter 5.5
- ASSIGNED ANYCAST - Chapter 6
- ASSIGNED - gets a mention in Chapter 5.5 but is not defined

When is a tree not a tree

When is a tree not a tree

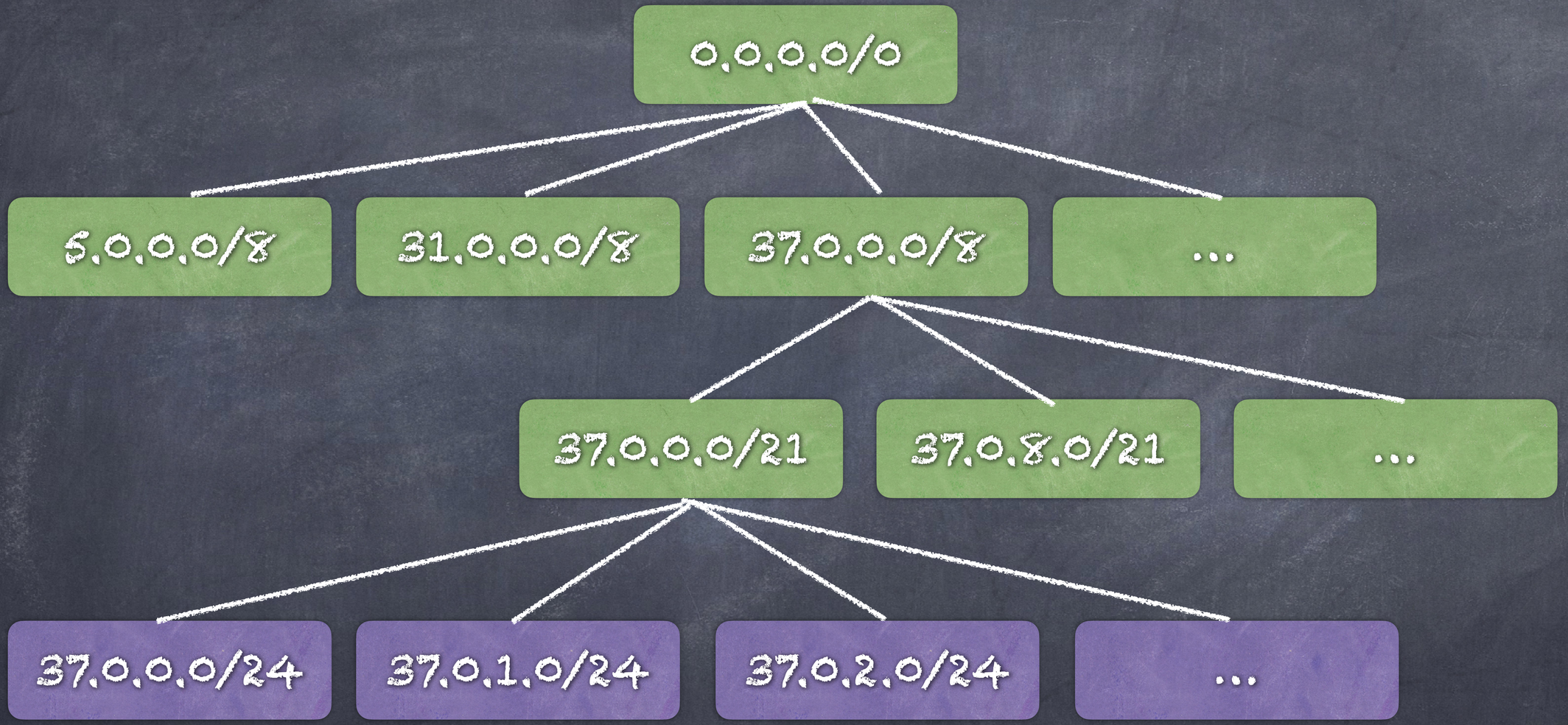
- When it's a table?
- Trees have apparent hierarchy - every element has a parent
- Tables need unique keys but data can/will overlap - see NWI-4 introducing 'ALLOCATED-ASSIGNED PA'

Address Space is Hierarchical

- But our way of registration isn't
- Think of number resource records as a tree
- It makes mapping to reality and RPKI a lot easier
- Tables force workarounds - see NWI-4 introducing 'ALLOCATED-ASSIGNED PA'

Notional inet(6)num

- [netName] (Unique ID)
- Block (the resources that are in it)
- Parent (the Unique ID of the layer above)
- Status (stub or no stub?)
- Holder (who's responsible for this block)
- [Additional data]


0.0.0.0/0
5.0.0.0/8
31.0.0.0/8
37.0.0.0/8
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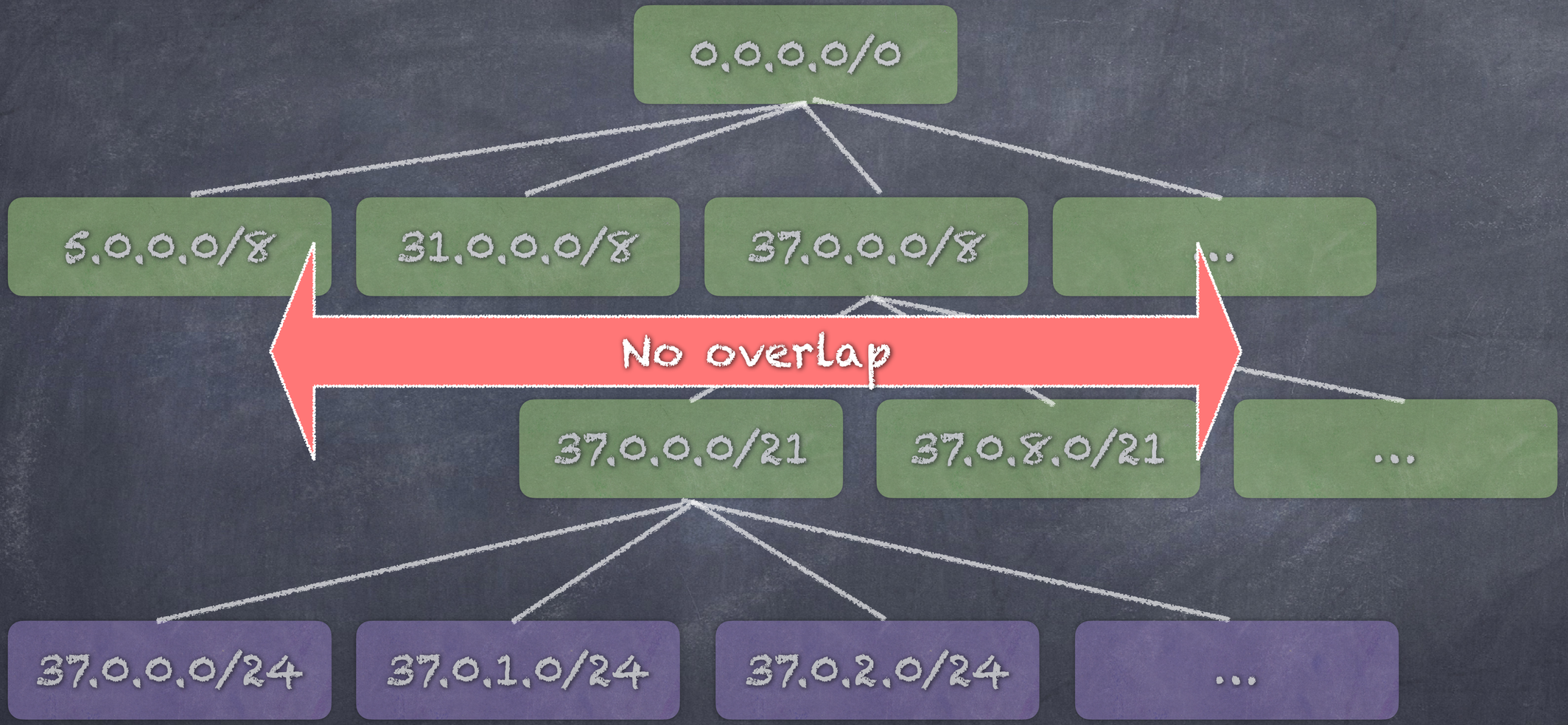
0.0.0.0/0
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No overlap
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37.0.8.0/21
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37.0.0.0/24
37.0.1.0/24
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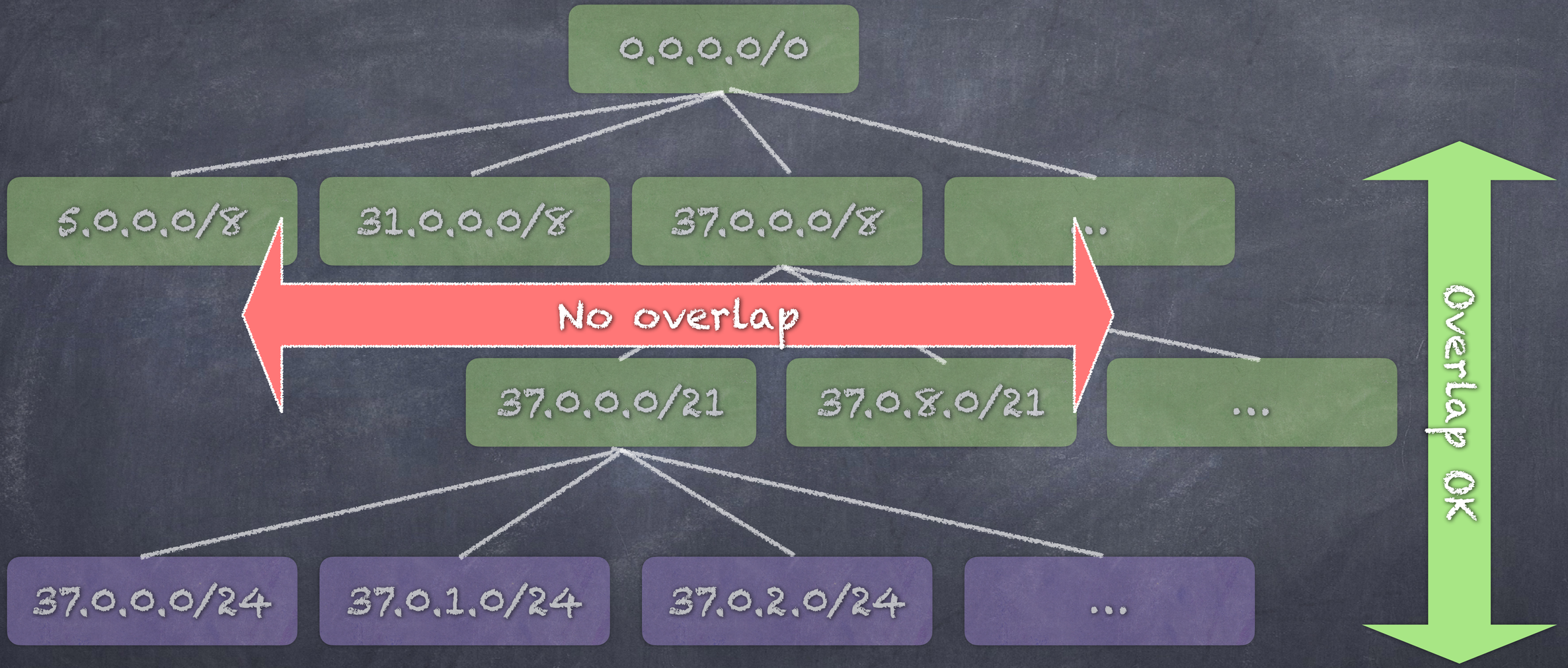
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37.0.8.0/21
...
37.0.0.0/24
37.0.1.0/24
37.0.2.0/24
...
Overlap OK

All the Types

All the animals in the zoo
and what they do

Assigned / Assigned PA

- Indicates that a block of address space is assigned to an end-user by an LIR.
- Exists equally in IPv4 and IPv6
- Defined in RIPE-140 for IPv4

Assigned PI

- Indicates that a block of address space is assigned to an end-user by the RIR via a sponsoring LIR
- Exists equally in IPv4 and IPv6
- Defined in RIPE-140 for IPv4

Legacy

- Indicates that a block of address space was assigned previous to the existence of the RIR system.
- Only exists in IPv4
- Defined in RIPE-140 for IPv4

Aggregated-by-LIR

- Indicates that a block of address space was assigned to a group of end-users in pre-defined chunks by an LIR
- Exists equally in IPv4 and IPv6
- Introduced in RIPE-513 for IPv6, RIPE-822 for IPv4

Assigned Anycast

- Indicates that a block of address space was assigned to an end-user by the RIR in line with the anycast assignment policy
- Exists in IPv4 and IPv6
- Removed from IPv4 policy as part of 2013-03

Allocated PA/ Allocated by RIR

- Indicates that a block of address space was allocated by the RIR to an LIR for further allocation or assignment
- Exists in IPv4 and IPv6

Allocated by LIR/ Sub-allocated PA

- Indicates that a block of address space was allocated by an LIR to another LIR or 'downstream operator' for further allocation or assignment
- Exists in IPv4 and IPv6

LIR Partitioned PA

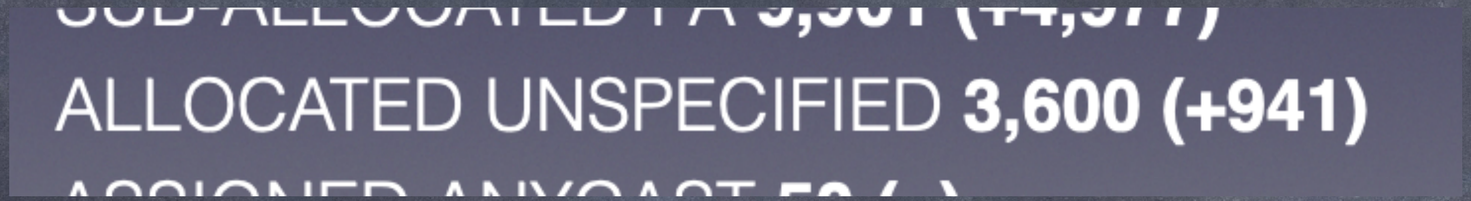
- Indicates that a block of address space was allocated by an LIR inside that same LIR for further allocation or assignment
- Exists in IPv4 and IPv6
- Defined in RIPE-234

Allocated Unspecified

- Indicates that a block of address space was allocated by <undefined> to an RIR for further distribution
- Exists in IPv4 only
- Defined in RIPE-140 with the remark:
  This type of allocation is obsolete, and will not be applied to future allocations.

Allocated Unspecified

- From my previous slide deck:



Allocated Unspecified

- In active use by RIPE NCC for address space that has been transferred to another RIR!

ALLOCATED-ASSIGNED PA

- Indicates that a block of address space was allocated by the RIR to an LIR for further allocation or assignment - AND -
- Indicates that same block of address space is assigned to an end-user/infrastructure by an LIR.
- Exists in IPv4 only (?)
- Introduced in May 2024

Title	Role	Family	Holder	By	To
Assigned PA	ASSIGN	Both	LIR	LIR	End-user
Assigned PI	ASSIGN	Both	End-user	RIR	End-user
Legacy	ASSIGN	IPv4	Legacy-holder	"IANA"	Legacy-holder
Aggregated by LIR	[ASSIGN]	Both	LIR	LIR	[End-user]
Assigned Anycast	ASSIGN	IPv6?!	RIR	RIR	End-user
Allocated PA	ALLOCATE	Both	LIR	RIR	LIR
Sub-allocated PA	ALLOCATE	Both	LIR	LIR	"Downstream"
LIR-Partitioned PA	ALLOCATE	Both	LIR	LIR	Same LIR
Allocated Unspecified	ALLOCATE	IPv4	RIR	IANA/RIR	RIR

Title	Role	Responsible	To
Allocated	ALLOCATE	LIR	IR or "Downstream"
Assigned	ASSIGN	End-User	End-user
Aggregated by LIR	[ASSIGN]	LIR	[End-user]

In Summary

- The proposed policy is an attempt to move closer to the goals of 'concise, complete, consistent'
- The rationale in the initial draft was a bit rushed and didn't do a good job describing 'why'
- Good stewardship requires self-reflection

As a WG, we have a choice:

1. deal with the inconsistencies and clean-up through this proposal
2. Decide on a wider approach, ARIN-style, and take all of our pieces of policy into a single manual with editorial control and review